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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,948	02/21/2002	Tim Forrester	UTL 00077	1391

7590 07/18/2005

Attn: Patent Department
Kyocera Wireless Corp.
PO Box 928289
San Diego, CA 92192-8289

EXAMINER	
AMINZAY, SHAIMA Q	
ART UNIT	**PAPER NUMBER**
2684	

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/080,948	FORRESTER, TIM	
	Examiner	Art Unit	
	Shaima Q. Aminzay	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-19 and 21-24* is/are allowed.

6)☒ Claim(s) *1-5,7-11 and 26-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *November 12, 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The following office action is in response to Amendment, filed on December 14, 2004.

Claims 6, 20, and 25 are cancelled.

Claims 1-5, 7-19, 21-24, and 26-35 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action

> (a) Patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made

1. Claims 1-5, 7-8, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howell (Howell et al. U. S. Patent 6,542,119 B2) in view of Devereux (Devereux et al. U. S. Patent 5,594,454).

Regarding claim 1, Howell discloses a handheld wireless communications device (see for example, column 2, lines 57-60), comprising: a first antenna (see for example, Figure 2, antenna 212); a second antenna (see for example, Figure 2, antenna 216); a switching module (Figure 2, 202) coupled to the first antenna

and to the second antenna (see for example, Figure 2, switch 220 is coupled with antenna 212, and 216); and a global positioning system (GPS) module coupled to the first antenna or the second antenna via the switching module (see for example, Figure 2, the switching module 202 (switch 220, 224, and 226) is coupled with antenna 212, and 216), wherein the switching module is adapted to couple the GPS module (see for example, Figure 2, GPS receiver 200) to the first antenna or the second antenna as a function of signal characteristic of first antenna or second antenna (see for example, Figure 2, column 2, lines 12-36, column 3, lines 34-43, column 5, lines 25-37, lines 55-60).

Howell, further discloses the signal quality, however, Howell does not specifically disclose bit error rate (BER).

In related art dealing with GPS antennas and radio communications (see for example, column 1, lines 15-16, and column 2, lines 16-22), Devereux discloses wherein the GPS reception characteristic includes a GPS bit error rate (see for example, column 5, lines 1-8, lines 52-67, column 6, lines 1-6).

It would have been obvious to one of ordinary skill in the art at the time invention was made to include Devereux's the GPS BER characteristic into Howell's wireless handheld communication device with GPS to provide a wireless handheld GPS communication device (Howell, see for example, column 2, lines 57-60) to "improved noise immunity, reduced transmitter and downlink-induced distortions, quantifiable downlink-induced losses, and the ability to encode and encrypt the data" (Devereux, column 2, lines 18-21).

Regarding claim 26, Howell discloses a global positioning system (GPS) enabled wireless communications (see for example, column 2, lines 57-60), comprising the steps of: (a) coupling a GPS module to a first antenna (212) via a diversity switch (see for example, Figure 2, switch module 202 (diversity switch 220, 224, and 226)); (b) evaluating a first GPS signal quality of a first GPS signal received on the first antenna (see for example, column 3, lines 35-43); (c) coupling the GPS module to a second (216) antenna via the diversity switch (see for example, Figure 2, switch module 202 (diversity switch 220, 224, and 226)); (d) evaluating a second GPS signal quality of a second GPS signal received on the second antenna (see for example, column 3, lines 35-43and (e) coupling the GPS module to the second antenna instead of the first antenna via the diversity switch (see for example, column 3, lines 35-43, and Figure 2, switch module 202 (diversity switch 220, 224, and 226)).

Howell, further discloses the signal quality, however, Howell does not specifically disclose bit error rate (BER).

In related art dealing with GPS antennas and radio communications (see for example, column 1, lines 15-16, and column 2, lines 16-22), Devereux discloses wherein the GPS reception characteristic includes a GPS bit error rate (see for example, column 5, lines 1-8, lines 52-67, column 6, lines 1-6).

It would have been obvious to one of ordinary skill in the art at the time invention was made to include Devereux's the GPS BER characteristic into

Howell's wireless handheld communication device with GPS to provide a wireless handheld GPS communication device (Howell, see for example, column 2, lines 57-60) to "improved noise immunity, reduced transmitter and downlink-induced distortions, quantifiable downlink-induced losses, and the ability to encode and encrypt the data" (Devereux, column 2, lines 18-21).

Regarding claim 2, Howell in view of Devereux teach all the limitations of claim 1, and further, Howell teaches wherein the switching module includes a diversity switch (see for example, Figure 2, switch module 202 includes diversity switch (220, 224, and 226)), and wherein the GPS module is coupled to the first antenna (212) or the second antenna (216) via the diversity switch (see for example, Figure 2, switch module 202 (diversity switch 220, 224, and 226) where the first or second antenna makes connection).

Regarding claim 3, 4, and 5, Howell in view of Devereux teach all the limitations of claim 2, and further, Howell teaches a controller coupled to the GPS module and the switching module and the GPS reception characteristic is determined for a particular GPS frequency employed by the GPS module (see for example, column 2, lines 1-2, lines 16-19, column 3, lines 65-66, and column 4, lines 19-26, lines 29-34), and controller includes a mobile station modem (see for example, column 2, lines 49-60).

Regarding claims 7 and 8, Howell in view of Devereux teach all the limitations of claim 1, and further, Howell teaches the first antenna is not disposed in a same direction as the second antenna and the first antenna is disposed approximately orthogonally with respect to the second antenna (see for example, Figure 2, antenna 212 (first) and antenna 216 (second) directions).

Regarding claim 27, Howell in view of Devereux teach all the limitations of claim 26, and further, Devereux teaches coupling the GPS module to the second antenna instead of the first antenna via the diversity switch if the GPS reception characteristic of the second antenna is better than the GPS reception characteristic of the first antenna (see for example, column 3, lines 25-64, and Figure 2, switch module 202 (diversity switch 220, 224, and 226)).

Regarding claim 28, Howell in view of Devereux teach all the limitations of claim 26, and further, Devereux teaches coupling the GPS module to the second antenna instead of the first antenna via the diversity switch if the GPS reception characteristic of the first antenna becomes poor (see for example, column 3, lines 25-64, and Figure 2, switch module 202 (diversity switch 220, 224, and 226)).

Regarding claim 29, Howell in view of Devereux teach all the limitations of claim 26, and further, Devereux teaches the GPS reception characteristic of the

first antenna (see for example, column 3, lines 35-43).

Regarding claim 30, Howell in view of Devereux teach all the limitations of claim 26, and further, Devereux teaches temporarily coupling the GPS module to the second antenna via the diversity switch to sample the GPS signal (see for example, column 1, lines 58-61, and column 3, lines 25-45).

2. Claims 9, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howell (Howell et al. U. S. Patent 6,542,119 B2) in view of Devereux (Devereux et al. U. S. Patent 5,594,454), and further in view of Dooley (Dooley et al. U. S. Patent 6,525,689).

Regarding claim 9, 10, and 11, Howell in view of Devereux teach all the limitations of claim 1. However, Howell in view of Devereux do not teach GPS module includes a matching circuit and a low noise amplifier, and the matching circuit optimizes GPS signal characteristics including signal strength over the first antenna or the second antenna.

Dooley discloses amplification and the GPS signal information such as signal strength and other characteristics (see for example, column 6, lines 20-28).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Dooley's improved GPS signal received at mobile unit (see for example, column 1, lines 59-61) with Howell's "use of

multiple antennas for detecting GPS signal" (column 1, lines 12-13) to provide "a mobile unit comprising a GPS receiver for receiving the GPS signal; a communications receiver for receiving GPS signal information from a base station; and a processor arranged to modify the GPS signal information so as reflect the GPS signal characteristics as would be observed at an estimated location of the mobile unit" (Dooley, column 3, lines 7-12).

3. Claims 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howell (Howell et al. U. S. Patent 6,542,119 B2) in view of Devereux (Devereux et al. U. S. Patent 5,594,454), and further in view of Meredith (Meredith et al. U. S. Patent 6,052,605).

Regarding claims 31-33 and 34, Howell in view of Devereux teach all the limitations of claim 26. However, Howell in view of Devereux do not teach a duplexer coupled to the switching module; a receiver module coupled to the duplexer; and a transmitter module coupled to the duplexer, wherein the switching module is adapted to couple the duplexer to the first antenna or the second antenna as a function of a communications reception characteristic or a communications transmission characteristic of the first antenna or the second antenna.

Meredith discloses duplexer (Figure 1, 206) coupled to the switching module (see for example, Figure 1, receiver modular interconnect to the matrix switch

200, column 4, lines 60-64, and column 5, lines 21-24); a receiver module (Figure 1, receiver module 200) coupled to the duplexer (Figure 1, 202); and a transmitter module (Figure 1, transmitter module 900) coupled to the duplexer (Figure 1, 202), wherein the switching module is adapted to couple the duplexer to the first antenna or the second antenna as a function of a communications reception characteristic or a communications transmission characteristic of the first antenna or the second antenna (see for example, Figure 1, column 4, lines 3 through column 5 lines 49).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Meredith's utilizing duplexers in a mobile communication system (see for example, column 1, lines 6-8, Figure 1, and column 4, lines 60-64) with Howell's "use of multiple antennas for detecting GPS signal" (column 1, lines 12-13) to provide a mobile communication with "improved assessment of potential interference during communication between mobile radio units and land mobile radio base sites of a land mobile radio system" (Meredith, column 1, lines 56-59).

Regarding claim 35, Howell in view of Devereux teach all the limitations of claim 26. However, Howell in view of Devereux do not teach a first communications band module coupled to the diplexer and a second communications band module coupled to the diplexer, wherein the switching module is adapted to couple the diplexer to the first antenna or the second

antenna as a function of a communications reception characteristic or a communications transmission characteristic of the first antenna or the second antenna.

Meredith discloses a first communications band module coupled to the diplexer and a second communications band module coupled to the diplexer, wherein the switching module is adapted to couple the diplexer to the first antenna or the second antenna as a function of a communications reception characteristic or a communications transmission characteristic of the first antenna or the second antenna (see for example, column 4, lines 3-67, and column 5, lines 1-49).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Meredith's utilizing duplexers in a mobile communication system (see for example, column 1, lines 6-8, Figure 1, and column 4, lines 60-64) with Howell's "use of multiple antennas for detecting GPS signal" (column 1, lines 12-13) to provide a mobile communication with "improved assessment of potential interference during communication between mobile radio units and land mobile radio base sites of a land mobile radio system" (Meredith, column 1, lines 56-59).

Allowable Subject Matter

4. Claims 12-19, and 21-24 are allowable.

Response to Arguments

Applicant's arguments filed December 14, 2004 have been fully considered.

5. Arguments with respect to claims 12-19, and 21-24 are moot in view of indicating that they are allowable subject matter.

6. Applicant's arguments with respect to claims 10-5, 7-11, and 26-35 are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action

The prior art made of record considered pertinent to applicant's disclosure, see PTO-892 form.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 703-305-8723. The examiner can normally be reached on 7:00 AM -5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882, the primary examiner, Nick Corsaro can be reached on 571-272-7876.The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shaima Q. Aminzay

(Examiner)

NICK CORSARO
PRIMARY EXAMINER

Nick Corsaro

(Primary Examiner)

Art Unit 2684

Jun 11, 2005